

Appl. No. 09/902,683

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (original): A Border Gateway Protocol Speaker (BGP Speaker) in a communication system which implements at least one network based Virtual Private Network (NB-VPN) across a backbone, the at least one NB-VPN using an Open System Interconnect (OSI) layer-2 protocol and an OSI layer-3 protocol, at least one NB-VPN using an OSI layer-2 protocol different from an OSI layer-2 protocol used by the backbone or using an OSI layer-3 protocol different from an OSI layer-3 protocol used by the backbone, the BGP Speaker transmitting an Update message being in conformance with a Border Gateway Protocol (BGP), and the Update message further including:

Virtual Private Network (VPN) Membership information;

a VPN Reachability Mode field;

VPN Reachability information; and

Tunnel Mechanism information.

Claim 2 (original): The BGP Speaker of claim 1 wherein the VPN Membership information includes:

at least one VPN Identification (VPN-ID) field; and

a Number of VPN-IDs field.

Claim 3 (original): The BGP Speaker of claim 1 wherein the VPN Reachability information includes zero or more VPN Reachability Entries.

Claim 4 (original): The BGP Speaker of claim 3 wherein a VPN Reachability Entry includes:

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a VPN Reachability Type field;

a Length field; and

a VPN Reachability Value field.

Claim 5 (original): The BGP Speaker of claim 1 wherein the Tunnel Mechanism information includes zero or more VPN Tunnel Entries.

Claim 6 (original): The BGP Speaker of claim 5 wherein a VPN Tunnel Entry includes:

a Tunnel Type field;

a Length field; and

a Tunnel Value field.

Claim 7 (original): The BGP Speaker of claim 1 wherein the Update message includes a unique Subsequent Address Family Identifier (SAFI) value indicating that the Update message includes:

Virtual Private Network (VPN) Membership information;

VPN Reachability information; and

Tunnel Mechanism information.

Claim 8 (original): The BGP Speaker of claim 7 wherein the unique SAFI value is 129.

Claim 9 (original): The BGP Speaker of claim 1 wherein the Update message further includes a field indicating a topology of a NB-VPN.

Claim 10 (currently amended): In a communication system which implements at least one network based Virtual Private Network (NB-VPN) across a backbone, the at least one NB-VPN using an Open System Interconnect (OSI) layer-2 protocol and an OSI layer-3 protocol, at least one NB-VPN using an OSI layer-2 protocol different from an OSI layer-2 protocol used by the backbone or using an OSI layer-3 protocol different from an OSI layer-3 protocol used by the

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backbone, ~~a data-format of~~ an Update message embodied in a transmission medium and comprising a data format, the data format being in conformance with a Border Gateway Protocol (BGP) and further including:

Virtual Private Network (VPN) Membership information;

a VPN Reachability Mode field;

VPN Reachability information; and

Tunnel Mechanism information.

Claim 11 (currently amended): The ~~data-format~~ Update message of claim 10 wherein the VPN Membership information includes:

at least one VPN Identification (VPN-ID) field; and

a Number of VPN-IDs field.

Claim 12 (currently amended): The ~~data-format~~ Update message of claim 10 wherein the VPN Reachability information includes zero or more VPN Reachability Entries.

Claim 13 (currently amended): The ~~data-format~~ Update message of claim 12 wherein a VPN Reachability Entry includes:

a VPN Reachability Type field;

a Length field; and

a VPN Reachability Value field.

Claim 14 (currently amended): The ~~data-format~~ Update message of claim 10 wherein the Tunnel Mechanism information includes zero or more VPN Tunnel Entries.

Claim 15 (currently amended): The ~~data-format~~ Update message of claim 14 wherein a VPN Tunnel Entry includes:

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a Tunnel Type field;

a Length field; and

a Tunnel Value field.

Claim 16 (currently amended): The ~~data-format~~ Update message of claim 10 wherein a unique Subsequent Address Family Identifier (SAFI) value is used to indicate that the Update message includes:

Virtual Private Network (VPN) Membership information;

VPN Reachability information; and

Tunnel Mechanism information.

Claim 17 (currently amended): The ~~data-format~~ Update message of claim 16 wherein the unique SAFI value is 129.

Claim 18 (currently amended): The ~~data-format~~ Update message of claim 10 further including a field indicating a topology of a NB-VPN.

Claim 19 (original): A Virtual Router (VR) in a communication system which implements at least one network based Virtual Private Network (NB-VPN) across a backbone, the at least one NB-VPN using an Open System Interconnect (OSI) layer-2 protocol and an OSI layer-3 protocol, at least one NB-VPN using an OSI layer-2 protocol different from an OSI layer-2 protocol used by the backbone or using an OSI layer-3 protocol different from an OSI layer-3 protocol used by the backbone, the VR receiving an Update message being in conformance with a Border Gateway Protocol (BGP), the Update message further including information relating to a NB-VPN to which the VR belongs and information relating to networking systems used by the NB-VPN to which the VR belongs, and the VR including instructions for establishing an OSI layer-2 connection to at least one other VR in the communication system.

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Claim 20 (original): The Virtual Router of claim 19 wherein the Update message includes a unique Subsequent Address Family Identifier (SAFI) value indicating that the Update message includes:

Virtual Private Network (VPN) Membership information;

VPN Reachability information; and

Tunnel Mechanism information.

Claim 21 (original): The Virtual Router of claim 20 wherein the unique SAFI value is 129.